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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,400	01/07/2002	Shigeru Abe	217429US3	3591

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EXAMINER

COOKE, COLLEEN P

ART UNIT PAPER NUMBER

1725

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/036,400

Applicant(s)

ABE, SHIGERU

Examiner

Colleen P Cooke

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

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***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 12 are drawn to an apparatus having a gas injection mechanism having several features claimed and a soldering iron. It is unclear what relation, if any, exists between the gas injection mechanism and soldering iron as claimed, since the claim language currently does not describe them as being in connection or conjunction with each other but appears to indicate they are both components of the one apparatus claimed. It appears from the specification and figures that the gas injection mechanism is at least coupled to, if not integral with, the soldering iron and the claim should be amended to indicate as such. For the purposes of examination, the claim will be treated as requiring the entire gas injection mechanism be coupled to the soldering iron.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bickford et al. (4937006).

Bickford et al. teaches using a hot gas stream for soldering (Column 5, lines 10-11), wherein the gas stream is a mixture of preferably 10% hydrogen and 90% nitrogen (Column 5, lines 23-26), and wherein once heated the gas is mixed and directed in a stream at the surface to be soldered (Column 5, lines 41-43).

The claim requires the gas to be mixed and for that result gas to be heated, while Bickford et al. suggest that the gas is first heated, and the hot gas is then mixed. It would have been obvious to modify the method of Bickford et al. by heating the gas to then mixed the gas after it has been dried by being dehumidified.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bickford et al. (4937006) as applied to claim 1 above, and further in view of Kobayashi (JP 06170522 A).

Bickford et al. teaches the use of the gas stream as described with respect to claims 1 above for soldering. Bickford et al. does not describe using the gas stream in a solder guide for feeding thread solder to a soldering iron.

Kobayashi teaches that soldering using thread solder, where gas is blown from a nozzle into a guide tube of the thread solder (see attached partial translation).

Bickford et al. and Kobayashi are analogous art because they are from the same field of endeavor, which is soldering. It would have been obvious to modify the method of Bickford et al. by using the gas stream in conjunction with thread soldering because Kobayashi teaches use of a gas stream as such is known for thread soldering and also because the properties of the gas

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stream of Bickford et al. (non-reactive, breaks up surface oxide – see Column 5, lines 13-30) would be conducive to thread soldering.

### ***Allowable Subject Matter***

Claims 4 and 12, and thus their dependents, would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach or suggest such a gas regulating, mixing, and heating apparatus be all incorporated with and directly in contact with the soldering iron; the prior art indicates that the gas be treated in a separate apparatus and supplied in mixed, heated form from the separate apparatus to the soldering iron.

### ***Conclusion***

Any inquiry concerning this or earlier communications from the examiner should be directed to Colleen Cooke, whose telephone number is 703-305-1136. She can normally be reached Monday-Thursday from 7:15-5:45pm.

If attempts to reach the examiner by telephone are unsuccessful, her supervisor, Thomas Dunn, can be reached at 703-308-3318. The official fax number for the organization where this application or proceeding is assigned is 703-305-6078. The unofficial fax number for this examiner is 703-746-3048.

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Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is 703-308-0661.

CPC 9/2/2003



TOM DUNN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700